

AMENDMENTS TO THE CLAIMS:

1. – 27. (Canceled)

28. **(Currently Amended)** A method for determining the ethnic origin of a male, comprising: analyzing a nucleic acid sample from ~~the male for~~ **a male for the presence or absence of** an allelic form of a plurality of Y chromosome polymorphisms, ~~which polymorphisms are biallelic or triallelic, wherein the plurality of polymorphisms is representative of allelic forms of at least one of~~ **haplotype Group I, haplotype Group II, haplotype Group III, haplotype Group IV, haplotype Group V, haplotype Group VI, haplotype Group VII, haplotype Group VIII, haplotype Group IX or haplotype Group X; includes at least one of M150 (SEQ ID NO: 449), M247 (SEQ ID NO: 729), and M249 (SEQ ID NO: 735),**

~~determining the allelic form of the plurality of Y chromosome polymorphisms in the nucleic acid sample;~~

~~wherein detection of an allelic form of a marker is indicative of the haplogroup of the male, which haplogroup is indicative of the ethnic origin of the male.~~

29. **(Previously Presented)** The method of claim 28, wherein the plurality of polymorphic markers identify a sub-haplogroup for the ethnic origin of the male.

30. -32. (Canceled)

33. **(Currently Amended)** The method of claim 32, wherein **detecting a guanine at position 313 in M249, a cytosine at position 224 in M247, or a thymine at position 146 in M150 indicates the male is a member of haplotype Group II** ~~the plurality of polymorphisms includes M249, wherein the nucleotide at position 313 is guanine.~~

34. – 55 (Canceled)

56. **(New)** The method of claim 28, wherein the method further includes analyzing a plurality of polymorphisms of allelic forms of at least one of haplotype Group I, haplotype Group III, haplotype

Group IV, haplotype Group V, haplotype Group VI, haplotype Group VII, haplotype Group VIII, haplotype Group IX or haplotype Group X.

57. **(New)** A method for determining the ethnic origin of a male, comprising:

analyzing a nucleic acid sample from a male for the presence or absence of an allelic form of a plurality of Y chromosome polymorphisms, wherein the plurality of polymorphisms includes M246 (SEQ ID NO: 726),

wherein detection of an allelic form of a marker is indicative of the haplogroup of the male, which haplogroup is indicative of the ethnic origin of the male.

58. **(New)** The method of claim 57, wherein the plurality of polymorphic markers identify a sub-haplogroup for the ethnic origin of the male.

59. **(New)** The method of claim 57, wherein detecting a guanine at position 284 in M246 indicates the male is a member of haplotype Group I.

60. **(New)** The method of claim 57, wherein the method further includes analyzing a plurality of polymorphisms of allelic forms of at least one of haplotype Group II, haplotype Group III, haplotype Group IV, haplotype Group V, haplotype Group VI, haplotype Group VII, haplotype Group VIII, haplotype Group IX or haplotype Group X.

61. **(New)** A method for determining the ethnic origin of a male, comprising:

analyzing a nucleic acid sample from a male for the presence or absence of an allelic form of a plurality of Y chromosome polymorphisms, wherein the plurality of polymorphisms includes M191 (SEQ ID NO: 569),

wherein detection of an allelic form of a marker is indicative of the haplogroup of the male, which haplogroup is indicative of the ethnic origin of the male.

62. **(New)** The method of claim 61, wherein the plurality of polymorphic markers identify a sub-haplogroup for the ethnic origin of the male.

63. (New) The method of claim 61, wherein detecting a guanine at position 342 in M191 indicates the male is a member of haplotype Group III.

64. (New) The method of claim 61, wherein the method further includes analyzing a plurality of polymorphisms of allelic forms of at least one of haplotype Group I, haplotype Group II, haplotype Group IV, haplotype Group V, haplotype Group VI, haplotype Group VII, haplotype Group VIII, haplotype Group IX or haplotype Group X.

65. (New) A method for determining the ethnic origin of a male, comprising:
analyzing a nucleic acid sample from a male for the presence of absence of an allelic form of a plurality of Y chromosome polymorphisms, wherein the plurality of polymorphisms includes M174 (SEQ ID NO: 519),

wherein detection of an allelic form of a marker is indicative of the haplogroup of the male, which haplogroup is indicative of the ethnic origin of the male.

66. (New) The method of claim 65, wherein the plurality of polymorphic markers identify a sub-haplogroup for the ethnic origin of the male.

67. (New) The method of claim 65, wherein detecting a cytosine at position 219 in M174 indicates the male is a member of haplotype Group IV.

68. (New) The method of claim 65, wherein the method further includes analyzing a plurality of polymorphisms of allelic forms of at least one of haplotype Group I, haplotype Group II, haplotype Group III, haplotype Group V, haplotype Group VI, haplotype Group VII, haplotype Group VIII, haplotype Group IX or haplotype Group X.

69. (New) A method for determining the ethnic origin of a male, comprising:
analyzing a nucleic acid sample from a male for the presence of absence of an allelic form of a plurality of Y chromosome polymorphisms, wherein the plurality of polymorphisms includes M216 (SEQ ID NO: 642),

wherein detection of an allelic form of a marker is indicative of the haplogroup of the male, which haplogroup is indicative of the ethnic origin of the male.

70. **(New)** The method of claim 69, wherein the plurality of polymorphic markers identify a sub-haplogroup for the ethnic origin of the male.

71. **(New)** The method of claim 69, wherein detecting a thymine at position 54 in M216 indicates the male is a member of haplotype Group V.

72. **(New)** The method of claim 69, wherein the method further includes analyzing a plurality of polymorphisms of allelic forms of at least one of haplotype Group I, haplotype Group II, haplotype Group III, haplotype Group IV, haplotype Group VI, haplotype Group VII, haplotype Group VIII, haplotype Group IX or haplotype Group X.

73. **(New)** A method for determining the ethnic origin of a male, comprising:
analyzing a nucleic acid sample from a male for the presence of absence of an allelic form of a plurality of Y chromosome polymorphisms, wherein the plurality of polymorphisms includes M304 (SEQ ID NO: 899),

wherein detection of an allelic form of a marker is indicative of the haplogroup of the male, which haplogroup is indicative of the ethnic origin of the male.

74. **(New)** The method of claim 73, wherein the plurality of polymorphic markers identify a sub-haplogroup for the ethnic origin of the male.

75. **(New)** The method of claim 73, wherein detecting a cytosine at position 421 in M304 indicates the male is a member of haplotype Group VI.

76. **(New)** The method of claim 73, wherein the method further includes analyzing a plurality of polymorphisms of allelic forms of at least one of haplotype Group I, haplotype Group II, haplotype Group III, haplotype Group IV, haplotype Group V, haplotype Group VII, haplotype Group VIII, haplotype Group IX or haplotype Group X.

77. **(New)** A method for determining the ethnic origin of a male, comprising:

analyzing a nucleic acid sample from a male for the presence of absence of an allelic form of a plurality of Y chromosome polymorphisms, wherein the plurality of polymorphisms includes M214 (SEQ ID NO: 636),

wherein detection of an allelic form of a marker is indicative of the haplogroup of the male, which haplogroup is indicative of the ethnic origin of the male.

78. **(New)** The method of claim 77, wherein the plurality of polymorphic markers identify a sub-haplogroup for the ethnic origin of the male.

79. **(New)** The method of claim 77, wherein detecting a cytosine at position 404 in M214 indicates the male is a member of haplotype Group VII.

80. **(New)** The method of claim 77, wherein the method further includes analyzing a plurality of polymorphisms of allelic forms of at least one of haplotype Group I, haplotype Group II, haplotype Group III, haplotype Group IV, haplotype Group V, haplotype Group VI, haplotype Group VIII, haplotype Group IX or haplotype Group X.

81. **(New)** A method for determining the ethnic origin of a male, comprising:

analyzing a nucleic acid sample from a male for the presence of absence of an allelic form of a plurality of Y chromosome polymorphisms, wherein the plurality of polymorphisms includes M61 (SEQ ID NO: 176),

wherein detection of an allelic form of a marker is indicative of the haplogroup of the male, which haplogroup is indicative of the ethnic origin of the male.

82. **(New)** The method of claim 81, wherein the plurality of polymorphic markers identify a sub-haplogroup for the ethnic origin of the male.

83. **(New)** The method of claim 81, wherein detecting a thymine at position 98 in M61 indicates the male is a member of haplotype Group VIII.

84. (New) The method of claim 81, wherein the method further includes analyzing a plurality of polymorphisms of allelic forms of at least one of haplotype Group I, haplotype Group II, haplotype Group III, haplotype Group IV, haplotype Group V, haplotype Group VI, haplotype Group VII, haplotype Group IX or haplotype Group X.

85. (New) A method for determining the ethnic origin of a male, comprising:
analyzing a nucleic acid sample from a male for the presence or absence of an allelic form of a plurality of Y chromosome polymorphisms, wherein the plurality of polymorphisms includes M207 (SEQ ID NO: 615),

wherein detection of an allelic form of a marker is indicative of the haplogroup of the male, which haplogroup is indicative of the ethnic origin of the male.

86. (New) The method of claim 85, wherein the plurality of polymorphic markers identify a sub-haplogroup for the ethnic origin of the male.

87. (New) The method of claim 85, wherein detecting a guanine at position 79 in M207 indicates the male is a member of haplotype Group IX.

88. (New) The method of claim 85, wherein the method further includes analyzing a plurality of polymorphisms of allelic forms of at least one of haplotype Group I, haplotype Group II, haplotype Group III, haplotype Group IV, haplotype Group V, haplotype Group VI, haplotype Group VII, haplotype Group VIII or haplotype Group X.

89. (New) A method for determining the ethnic origin of a male, comprising:
analyzing a nucleic acid sample from a male for the presence or absence of an allelic form of a plurality of Y chromosome polymorphisms, wherein the plurality of polymorphisms includes M242 (SEQ ID NO: 714),

wherein detection of an allelic form of a marker is indicative of the haplogroup of the male, which haplogroup is indicative of the ethnic origin of the male.

90. **(New)** The method of claim 89, wherein the plurality of polymorphic markers identify a sub-haplogroup for the ethnic origin of the male.

91. **(New)** The method of claim 89, wherein detecting a thymine at position 337 in M242 indicates the male is a member of haplotype Group X.

92. **(New)** The method of claim 89, wherein the method further includes analyzing a plurality of polymorphisms of allelic forms of at least one of haplotype Group I, haplotype Group II, haplotype Group III, haplotype Group IV, haplotype Group V, haplotype Group VI, haplotype Group VII, haplotype Group VIII or haplotype Group IX.